

A review of the genus *Idiocerus* Lewis (Homoptera: Cicadellidae) in the Ethiopian region, with description of eight new species

by

M.D. WEBB

Department of Entomology, British Museum (Natural History)

Introduced by D. P. Annecke

The genus is discussed for the Ethiopian region and two species groups are proposed. Eight species are described as new, namely, *angulatus*, *bifurcatus*, *divergens*, *lobatus*, *projectus*, *serratus*, *sparsus* and *truncatus*. *I. citrinus* Melichar and *I. quadriocellatus* (Melichar) comb. nov., are redescribed and one lectotype is designated. A key to the males is given.

Although the genus *Idiocerus* is well known in the Palearctic and Nearctic regions, our knowledge of the Ethiopian species is still very limited. At the present time ten species are included in *Idiocerus* from this region, seven from Africa and three from Madagascar. The first species to be described were *haupti* and *quadriocellatus* from Tanzania, by Melichar in 1908. Later he described *funereus* from East Africa (Melichar, 1911) and *citrinus* from the Belgian Congo (Melichar, 1914). In 1916 Cogan described *hewitti* from South Africa and Naudé (1926) later described *cuneiformis* from the same area. No further species were described for the region until Evans (1953) described *maintiranus*, *madagascariensis* and *clavopunctatus*, and later *sakarahensis* (Evans, 1960), all from Madagascar. The first major work on the subfamily for Madagascar was by Freytag & Knight (1966) in which they described *exus* and erected the genus *Nesocerus* for *madagascariensis* and *clavopunctatus*. Finally, Linnauvori (1961) described *shapahoensis* from South West Africa, and Heller & Linnauvori (1968) described *harpago* from Ethiopia and *aethiopicus* from Somalia.

The relatively small number of known species makes a revision for the region inappropriate at this stage. The present study is therefore limited to a description of further new species to provide a better understanding of the genus and facilitate a future revision. During the course of this work many early descriptions were found to be inadequate and for this reason *citrinus* and *quadriocellatus* are redescribed and figured. Four species, *haupti*, *hewitti*, *cuneiformis* and *aethiopicus* are known only from female specimens and *funereus* from a single specimen of unknown sex. The latter could not be traced in any of Melichar's collections and until males are known for these five species their relationships remain uncertain.

In the following descriptions the abdominal apodemes are used to assist in the separation of species. These structures lie at the base of the abdomen and consist of two ventral pairs, of which the posterior pair are described, and a dorsal pair. The use of these structures together with other characters, enables two species groups to be

recognised. Species known only from females, or sex unknown, are tentatively grouped according to external characters only.

TABLE 1. Species groups and complexes within the Ethiopian species of the genus *Idiocerus*.

	Group I	Group II
“ <i>exus</i> -complex”		
<i>exus</i> Freytag and Knight		<i>maintiranus</i> Evans
<i>divergens</i> spec. nov.		<i>projectus</i> spec. nov.
<i>haupti</i> Melichar		<i>serratus</i> spec. nov.
<i>bifurcatus</i> spec. nov.		<i>sakarahensis</i> Evans
“ <i>sparsus</i> -complex”		<i>quadriocellatus</i> Melichar
<i>sparsus</i> spec. nov.		<i>lobatus</i> spec. nov.
<i>truncatus</i> spec. nov.		<i>citrinus</i> Melichar
<i>funereus</i> Melichar		<i>angulatus</i> spec. nov.
		<i>harpago</i> Heller & Linnavuori
		<i>aethiopicus</i> Heller & Linnavuori
		<i>cuneiformis</i> Naudé
		<i>hewitti</i> Cogan
		<i>ohopohensis</i> Linnavuori

The smallest group (Group I) consists of seven species characterized by being multicolorous with whitish spots along the veins, the head considerably wider than the pronotum, the lora widely separated from the margin of the face throughout their length, and the clypellus elongate. In the male genitalia the pygophore has a small process on each posterolateral margin, the connective is short, the style is foot-like apically, the aedeagal shaft is elongate with lateral processes always present, and the basal apodeme of the aedeagus is elongate, laterally compressed and flared apically in lateral aspect. The dorsal abdominal apodemes are separate, long, slender structures, and the ventral pair are long and broad, and arise from an arched transverse band. Two species complexes may be recognised within this group. The “*exus*-complex” consists of four species characterized by having 3–4 transverse orange bands on the head, and the aedeagus with a pair of processes or a single basally bifurcate process, on each side of the shaft. The “*sparsus*-complex”, consisting of three species, has the transverse bands on the head interrupted to form orange to brown spots and the aedeagus with either a pair of processes, of which the lower one is basally bifurcate, or two widely separated processes, on each side of the shaft. In addition, the styles are broader apically and the basal apodeme of the aedeagus is more robust.

The other group (Group II) contains many diverse forms whose affinities are not clear at present. Members of this group are characterized externally by being uni or multicolourous without whitish spots along the veins, the head considerably or slightly wider than the pronotum, the lora extending to the margin of the face for at least part of their length, and the clypellus long to short. In the male genitalia the pygophore lacks a process on each posterolateral margin (except in *maintiranus* where they are long), the connective is short or relatively long and the style is variable. The aedeagus is short or long, with or without processes, but if present then never subapical on each side of the shaft, and with the basal apodeme variable in length and shape. The dorsal abdominal apodemes are prominent, broad structures, united basally, and the ventral pair are reduced and membranous, forming either widely separate structures or united medially, entirely or basally, and always arising from an arched transverse band. The species *ohopohensis* differs from the above in having the ventral apodemes more conspicuous than the dorsal and not reduced or membranous.

In 1966 Freytag & Knight made reference to the “unusual spinulation of the hind tibia” of *exus*. This concerned the dorsoposterior row of spines on the hind tibia

which they referred to as "larger, fewer and more widely spaced than the other rows with distal three mounted on posterior face of strong, triangular processes". Of the species described in this work those in Group I have these processes medium to strong and those in Group II weak or absent. In the following descriptions these processes are referred to as hind tibial processes.

The classification used follows that proposed by Freytag & Knight (1966) which separated *Idiocerus* from the closely related *Idioscopus* by the number of spines on the apex of the hind femur, 2 in *Idiocerus* and 2 + 1 in *Idioscopus*.

The types of all new species are in the British Museum (Natural History) except where indicated.

KEY TO SPECIES OF *IDIOCERUS* FROM THE ETHIOPIAN REGION (males only)

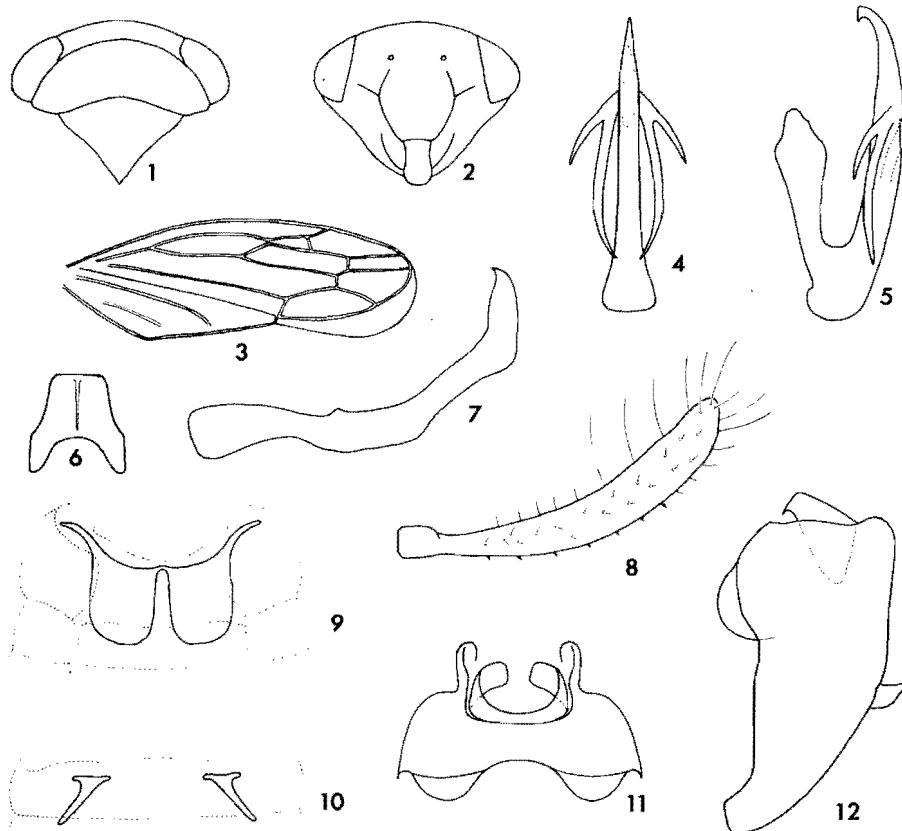
- 1 Aedeagus with processes present, arising laterally on distal half of shaft (Group I) 2
- Aedeagus with processes usually absent, if present then not arising laterally on distal half of shaft (Group II) 6
- 2 Head with 3-4 transverse orange bands "exus-complex" 3
- Head without transverse bands but with orange to brown spots "sparsus-complex" 5
- 3 Aedeagus in lateral aspect with shaft narrowing from base to apex; a long basally bifurcate process on each side of shaft just distad of midlength **bifurcatus**
- Aedeagus in lateral aspect with shaft expanding over basal two thirds, then narrowing to truncate apex; a pair of short processes on each side of shaft near apex 4
- 4 Aedeagus with processes of each pair strongly divergent in lateral aspect **divergens**
- Aedeagus with processes of each pair in lateral aspect only slightly divergent basally, convergent apically **exus**
- 5 Aedeagus with a pair of short, subapical processes on each side of shaft, the lower one bifurcate **truncatus**
- Aedeagus with a short subapical process and a longer process near midlength, on each side of shaft **sparsus**
- 6 Aedeagus with processes 7
- Aedeagus without processes 8
- 7 Aedeagus with a large process arising near apex of shaft on posterior margin, and a small process on each side of shaft near base; style with apex acute, lateral lobe absent. Xth segment in lateral aspect with apices bifurcate; not fused to pygophore **projectus**
- Aedeagus with a pair of elongate processes arising basally on anterior margin of shaft; style with apex foot-like, lateral lobe prominent. Xth segment in lateral aspect with apices acute; fused to pygophore **mainitiranus**
- 8 Styles with prominent lateral lobe 9
- Styles without prominent lateral lobe 13
- 9 Aedeagus with posterolateral margins of shaft fringed with a small serrated expansion (fig. 64) **serratus**
- Aedeagus not as above 10
- 10 Aedeagus with shaft elongate, slender, curved dorsally and then anteriorly (fig. 79) **quadriocellatus**
- Aedeagus with shaft short, robust, curved dorsally 11
- 11 Shaft of aedeagus with a small acute outgrowth near midlength of anterior margin. Xth segment in lateral aspect with apices acute; fused dorsomedially to pygophore **sakarahensis**
- Shaft of aedeagus without acute outgrowth on anterior margin. Xth segment in lateral aspect with apices bifurcate; not fused to pygophore 12
- 12 Aedeagus with anterior margin of shaft over distal two thirds laterally compressed; preatrium curved anterodorsally towards apex (fig. 87) **lobatus**
- Aedeagus with shaft cylindrical; preatrium straight (fig. 85) **citrinus**
- 13 Styles evenly curved dorsally; apex acute; ventral margin over apical third finely serrate **ohopohoensis**
- Styles turned laterally two thirds from base then angled sharply inward to acute apex 14

14 Aedeagus with base broad (fig. 100) **angulatus**
 — Aedeagus with base narrow (fig. 106) **harpago**

***Idiocerus bifurcatus* spec. nov., figs 1-12**

Length: ♂ 3.3 mm

Head pale stramineous with three transverse orange bands, two on anterior margin between eyes and a shorter one between ocelli; eyes dark brown suffused with yellow. Pronotum pale brown with irregular scattered whitish patches; anterior margin marked in parts with pale orange. Scutellum whitish; basal angles and apical half of medial area, pale brown. Forewings hyaline smoky brown; veins darker with whitish spots along length; basal angle and patch at base of fourth apical cell, whitish. Legs and venter pale stramineous.



Figs 1-12. *Idiocerus bifurcatus* spec. nov. 1. Head, pronotum and scutellum, dorsal view. 2. Face. 3. Forewing. 4. Aedeagus, posterior view. 5. Aedeagus, lateral view. 6. Connective, dorsal view. 7. Left style, lateral view. 8. Subgenital plate, lateral view. 9. Ventral abdominal apodemes. 10. Dorsal abdominal apodemes. 11. Pygophore and Xth segment, dorsal view. 12. Pygophore and Xth segment, lateral view.

Head wider than pronotum (6:5), shagreen; vertex with length uniform; face wider than long (6:5); laterofrontal sutures extending to just prior to corresponding ocellus; clypellus elongate with lateral margins concave, exceeding margin of face by one fifth length; lora widely separated from margin of face throughout their length. Pronotum twice length of vertex, shagreen. Scutellum equal in length to vertex and pronotum combined. Forewings with first apical cell largest, second and fourth equal in size, the former flared apically, third narrow, rectangular; first subapical cell open basally, second largest, third small; appendix reaching to inner distal angle of third apical cell. Hind tibial processes of medium strength.

Male genitalia with pygophore short, increasing in length dorsally, a small process on each posterolateral margin; anterior apodemes of moderate length, their common dorsal margin U-shaped in dorsal aspect. Xth segment horseshoe-shaped in dorsal aspect, increasing in width posteriorly in lateral aspect, not fused to pygophore. Subgenital plates narrowly spatulate in lateral aspect, curved dorsally; ventral margin with numerous small, spine-like setae along basal two thirds; a row of long setae along distal half of dorsal margin, extending round apex and along distal fifth of ventral margin; lateral surface with shorter setae. Connective broadly Y-shaped with low, dorsal medial keel. Styles elongate with apex foot-like, turned dorsally; lateral lobe small. Aedeagus in lateral aspect with shaft elongate, tapering to acute apex, the latter turned anteroventrally; a lateral, basally bifurcate and ventrally directed process on each side, just distad of midlength, the posterior branch of each process twice length of other; gonopore immediately basad of processes, extending to near apex; basal apodeme elongate, slightly flared apically, laterally compressed.

Dorsal abdominal apodemes slender, extending to anterior region of segment IV; ventral apodemes broad, extending to middle of segment IV.

MATERIAL EXAMINED. Holotype ♂: Uganda, Lolet, Karamoja, on grass. 29.iv.1956, P.E.S. and E. M. Whalley.

REMARKS. This species is similar in colour and form to *exus* but is distinguishable from the latter by its smaller size. The male genitalia are also similar with the exception of the aedeagus which has the shaft narrowing from base to apex in lateral aspect, rather than expanding to near apex and then narrowing, and with the lateral processes longer and arising nearer midlength of the shaft.

***Idiocerus divergens* spec. nov., figs 13-22**

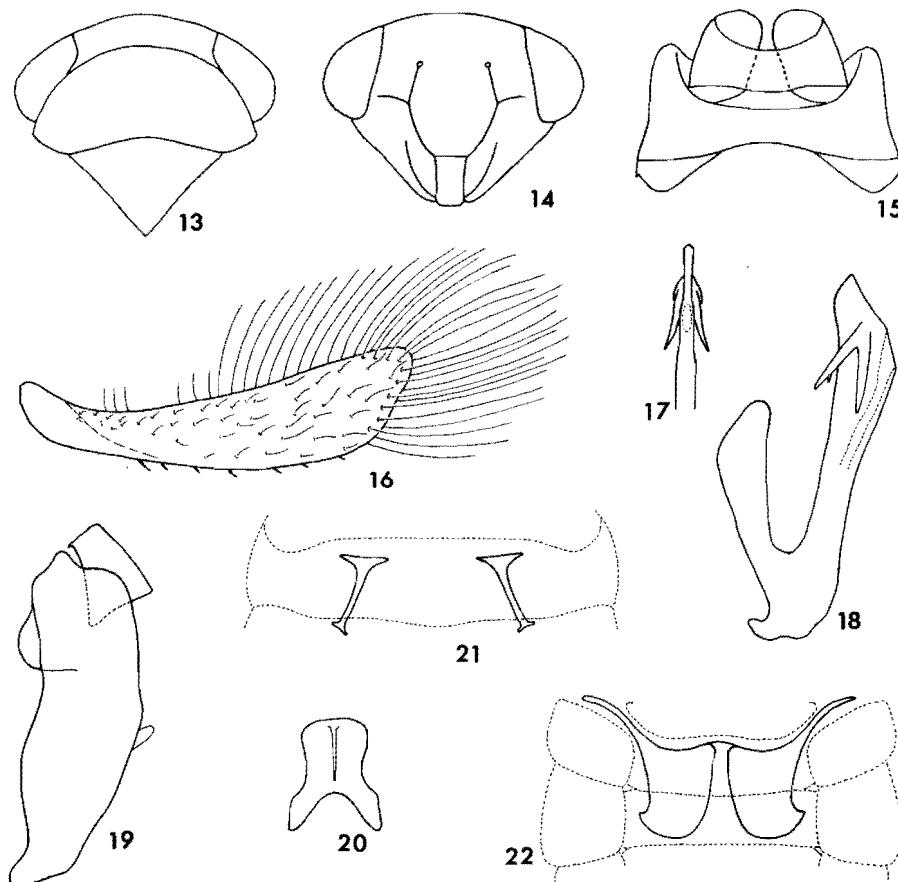
Length: ♂ 4.7-4.9 mm (mean 4.8 mm), ♀ 5-5.3 mm (mean 5.1 mm)

Head pale yellowish green, turning to stramineous over lower half of face; vertex with three longitudinal orange patches, joined anteriorly by transverse orange band; face with two transverse orange bands between eyes; eyes dark brown suffused with yellow. Pronotum pale yellowish green with four orange spots posteriorly and three anteriorly. Scutellum whitish; basal angles and medial area yellowish brown. Forewings hyaline smoky brown, basal two thirds marked with white; apex of fourth apical cell, dark brown; veins hyaline with brown and white spots along length. Venter stramineous. Legs pale yellow.

Head wider than pronotum (7.5:6), shagreen; vertex with length uniform; face wider than long (7.5:6); laterofrontal sutures extending to corresponding ocellus; clypellus elongate with lateral margins concave, slightly exceeding margin of face; lora widely separated from margin of face throughout their length. Pronotum approximately

2½ times length of vertex, shagreen. Scutellum approximately equal in length to pronotum. Forewings as in *bifurcatus*. Hind tibial processes strong.

Male genitalia with pygophore, Xth segment, connective and style as in *bifurcatus*. Subgenital plates as in *bifurcatus* but broader apically in lateral aspect, with marginal setae more numerous. Aedeagus in lateral aspect with shaft elongate, expanding over basal two thirds, then angled dorsally and tapered to a truncate laterally compressed apex; a pair of divergent, ventrally directed processes, equal in length, arising near apex on each side, the dorsal process of each pair with a minute secondary process near apex; gonopore immediately distad to flexure of shaft; basal apodeme elongate, flared apically, laterally compressed.



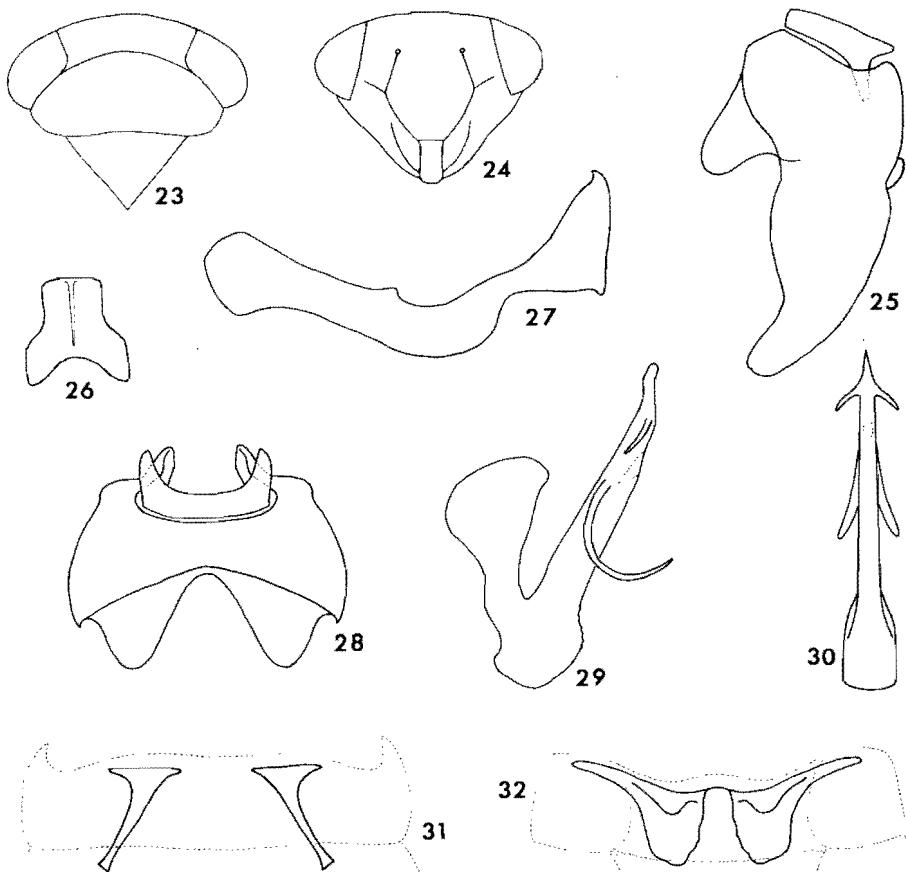
Figs 13-22. *Idiocerus divergens* spec. nov. 13. Head, pronotum and scutellum, dorsal view. 14. Face. 15. Pygophore and Xth segment, dorsal view. 16. Subgenital plate, lateral view. 17. Apex of aedeagus, posterior view. 18. Aedeagus, lateral view. 19. Pygophore and Xth segment, lateral view. 20. Connective, dorsal view. 21. Dorsal abdominal apodemes. 22. Ventral abdominal apodemes.

Abdominal apodemes as in *bifurcatus* but with ventral pair extending to posterior region of segment IV.

MATERIAL EXAMINED. Holotype ♂: Angola, Salazar, I.I.A.A., at light, 9–15.iii.1972.

Paratypes: 44 ♂♂, 36 ♀♀, same data as holotype. 1 ♂ and 1 ♀ will be deposited in the Plant Protection Research Institute, Pretoria.

REMARKS. This species is very closely related to *exus* but is distinguishable by the paired processes of the aedeagus which in *divergens* have the members of each pair strongly divergent throughout their length.



Figs 23–32. *Idiocerus sparsus* spec. nov. 23. Head, pronotum and scutellum, dorsal view. 24. Face. 25. Pygophore and Xth segment, lateral view. 26. Connective, dorsal view. 27. Left style, lateral view. 28. Pygophore and Xth segment, dorsal view. 29. Aedeagus, lateral view. 30. Aedeagus, posterior view. 31. Dorsal abdominal apodemes. 32. Ventral abdominal apodemes.

***Idiocerus sparsus* spec. nov., figs 23-32**

Length: ♂ 4.3 mm, ♀ 4.9 mm.

Pale stramineous with variable dark brown markings on face, pronotum, scutellum and venter; vertex marked with orange. Forewings hyaline smoky brown; veins darker with whitish spots along length.

External characters as in *divergens*.

Male genitalia with pygophore as in *divergens* but anterior apodemes longer, their common dorsal margin deeply V-shaped in dorsal aspect. Xth segment with apices bifurcate in lateral aspect, not converging medially. Connective and style as in *divergens*, but the style with foot-like apex broader and lateral lobe larger. Aedeagus in lateral aspect, with shaft elongate, tapering to rounded, upturned, apex; two processes on each side, a dorsal one arising near apex and directed ventrally, and a posterior one near midlength, approximately 4 times length of other, curved ventrally and then posteriorly; gonopore on posterior margin midway between processes; basal apodeme elongate, flared apically, laterally compressed.

Abdominal apodemes as in *divergens* but with ventral pair extending to anterior region of segment IV.

MATERIAL EXAMINED. Holotype ♂: N. Nigeria, Zaria, Samaru, m.v. trap, 8.iv.1966, J. Deeming.

Paratype: 1 ♀, same data as holotype.

REMARKS. This species is similar to *exus, bifurcatus* and *divergens* but lacks the transverse bands on the face and vertex. The male genitalia are also similar but the Xth segment has apices bifurcate in lateral aspect, rather than flared, and the styles are broader apically. The aedeagus is distinctive in possessing two widely separate processes on each side of the shaft, rather than a pair of processes, and having the basal apodeme more robust.

***Idiocerus truncatus* spec. nov., figs 33-45**

Length: ♂ 4.5-4.9 mm (mean 4.8 mm), ♀ 5.1-5.3 mm (mean 5.2 mm).

Colour and form as in *sparsus* but with markings on vertex orange to brown.

Male genitalia with pygophore, style and connective as in *sparsus*. Xth segment as in *bifurcatus*. Aedeagus with shaft elongate, expanding from base to near apex in lateral aspect, then narrowing to truncate apex; a pair of ventrally directed processes, equal in length, on each side near apex, the lower one bifurcate at its base; gonopore subapical, elongate; basal apodeme elongate, flared apically, laterally compressed.

Abdominal apodemes as in *divergens* but with the ventral pair extending to posterior region of segment III.

MATERIAL EXAMINED. Holotype ♂: Angola, Duque de Braganca Falls, 11-12.iii.1972.

Paratypes: 6 ♂♂, 4 ♀♀, same data as holotype.

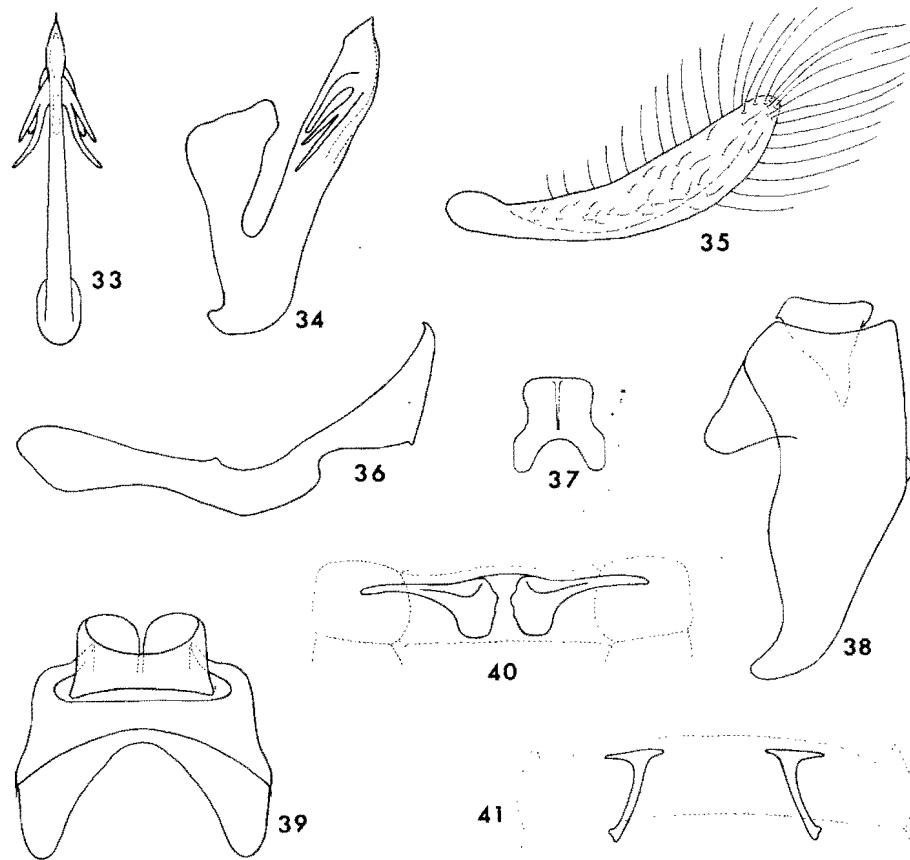
REMARKS. This species is closely related to *sparsus*, but has the apices of the Xth segment flared in lateral aspect, rather than bifurcate, and the lateral processes of the aedeagus of equal length, the lower one bifurcate, rather than widely separated and of different length.

Three specimens from South Africa, two males and one female are tentatively recorded as this species (see figs 42-45 for comparison). The two males are probably parasitized although without external signs.

Idiocerus projectus spec. nov., figs 46-57

Length: ♂ 3.5-3.8 mm (mean 3.7 mm), ♀ 3.4-3.8 mm (mean 3.5 mm).

Male pale yellowish green. Female usually pale yellow with dark brown markings, rarely concolorous with male. Eyes maroon variably suffused with yellow and/or red.

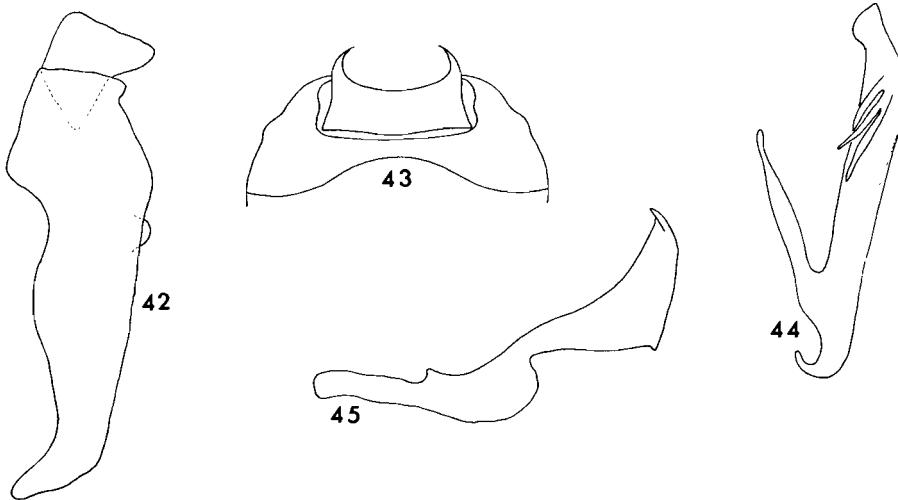


Figs 33-41. *Idiocerus truncatus* spec. nov. 33. Aedeagus, posterior view. 34. Aedeagus, lateral view. 35. Subgenital plate, lateral view. 36. Left style, lateral view. 37. Connective, dorsal view. 38. Pygophore and Xth segment, lateral view. 39. Pygophore and Xth segment, dorsal view. 40. Ventral abdominal apodemes. 41. Dorsal abdominal apodemes.

Head wider than pronotum (5:4), shagreen; vertex slightly shorter medially than next to eye; face wider than long (5:3.8); laterofrontal sutures extending to just below corresponding ocellus; clypellus with lateral margins concave, twice as long as medial width, slightly exceeding margin of face; lora reaching margin of face in basal third. Pronotum approximately twice as long as vertex, shagreen. Scutellum equal in length to pronotum and vertex combined. Forewings with the fourth apical cell largest; the first, second and third equal in size; subapical cells indistinct, third smallest, first and usually second open basally, cross vein $m_1 + 2$ sometimes present; appendix extending to inner distal angle of third apical cell. Hind tibial processes absent.

Male genitalia with pygophore short, increasing in length dorsally and terminating in a finger-like lobe, processes absent; anterior apodemes of moderate length, their common dorsal margin shallowly U-shaped in dorsal aspect. Xth segment horse-shoe shaped in dorsal aspect, apices bifurcate in lateral aspect with ventral branch membranous basally. Subgenital plates of uniform width in lateral aspect, curved dorsally; ventral margin with numerous small spine-like setae along basal half; a row of long setae along dorsal margin, extending round apex and along distal third of ventral margin; lateral surface with shorter setae. Connective broadly Y-shaped with two high, vertical, dorsal keels converging basally. Styles elongate, turned dorsolaterally at midlength, of uniform width in basal four fifths, then narrowing to acute apex. Aedeagus with shaft elongate, tapering in lateral aspect to rounded upturned apex; a large, ventrally directed process, on posterior margin near apex, extending to near base of shaft; smaller process on each side near base, directed dorsally; gonopore immediately distad to posterior process; basal apodeme short, compressed anteroposteriorly, flared apically.

Dorsal abdominal apodemes broad, extending to middle region of segment III; ventral pair reduced, fused basally.

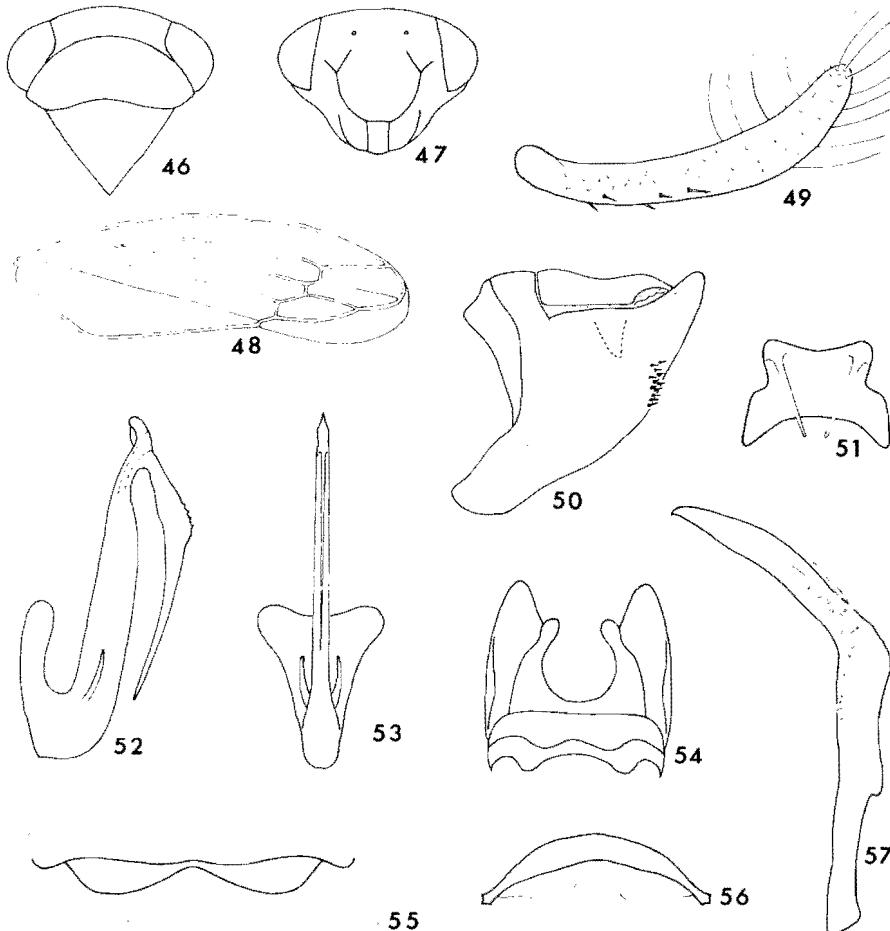


Figs 42-45. *Idiocerus truncatus* spec. nov., male genitalia, probably parasitized. 42. Pygophore and Xth segment, lateral view. 43. Pygophore and Xth segment, dorsal view. 44. Aedeagus, lateral view. 45. Left style, lateral view.

MATERIAL EXAMINED. Holotype ♂: S. W. Africa, Aus, 8–30.xi.1929, R. E. Turner.

Paratypes: 7 ♂♂, 17 ♀♀, same data as holotype, 2 ♂♂, 1 ♀, same data as holotype except i.1930; 1 ♀, same data as holotype except xii.1929. 1 ♂, and 1 ♀, will be deposited in the Plant Protection Research Institute, Pretoria.

REMARKS. This species can be distinguished from all other species in the genus by the unique aedeagus which has a single long posterior process, a small basal process on each side of the shaft and the basal apodeme compressed anteroposteriorly.



Figs 46–57. *Idiocerus projectus* spec. nov. 46. Head, pronotum and scutellum, dorsal view. 47. Face. 48. Forewing. 49. Subgenital plate, lateral view. 50. Pygophore and Xth segment, lateral view. 51. Connective, dorsal view. 52. Aedeagus, lateral view. 53. Aedeagus, posterior view. 54. Pygophore and Xth segment, dorsal view. 55. Dorsal abdominal apodemes. 56. Ventral abdominal apodemes. 57. Left style, ventral view.

Idiocerus serratus spec. nov., figs 58-68

Length: ♂ 3.4-3.6 mm (mean 3.5 mm), ♀ 3.8 mm.

Head pale stramineous, anterior margin with a dark brown spot near to each eye; eyes maroon variably suffused with yellow. Pronotum sordid yellow, pale, suffused with dark brown markings. Scutellum sordid ivory with dark brown spot in each basal angle. Forewings hyaline smoky brown; veins and patch along costal margin, pale yellow. Legs and venter pale yellow.

Head wider than pronotum (6:5), shagreen; vertex with length uniform; face wider than long (6:5); laterofrontal sutures extending to corresponding ocellus; clypellus with sides concave, slightly longer than greatest width at margin of face, exceeding latter by one third length. Pronotum 1½ times length of vertex, shagreen. Scutellum equal in length to pronotum and vertex combined. Forewings with first and fourth apical cells largest, third small, rectangular, fourth flared apically; first subapical cell open basally, second largest, third small, indistinct; appendix extending to middle of second apical cell. Hind tibial processes weak.

Male genitalia with pygophore short, increasing in length dorsally, without processes; anterior apodemes of moderate length, their common dorsal margin deeply V-shaped in dorsal aspect. Xth segment horseshoe-shaped in dorsal aspect, lower margin extending ventrally in lateral aspect; not fused to pygophore. Subgenital plates spatulate in lateral aspect, curved dorsally; ventral margin with two spine-like setae near midlength; a row of long setae along dorsal margin extending round apex and along distal half of ventral margin; lateral surface with shorter setae. Connective broadly Y-shaped with high dorsal, medial keel. Styles elongate with apex foot-like; lateral lobe prominent two thirds distance from base. Aedeagus with shaft elongate, slender, distal third turned dorsally, apex upturned, acuminate; posterolateral margins fringed with a small serrated expansion giving shaft a lamellate appearance; gonopore subapical; basal apodeme half length of shaft.

Dorsal abdominal apodemes broad, extending to middle of segment IV; ventral pair fused basally.

MATERIAL EXAMINED. Holotype ♂: Kenya, N.F.D., Wajir, 24.i.1955, I. Lansbury.

Paratypes: 1 ♂, 1 ♀, same data as holotype, 1 ♂, same data as holotype except 20.i.1955.

REMARKS. This species can be distinguished from all other species in the genus by the unique shape of the aedeagus which lacks processes but has the posterolateral margins of the shaft fringed with a small serrated expansion.

Idiocerus quadriocellatus (Melichar) comb. nov., figs 69-79

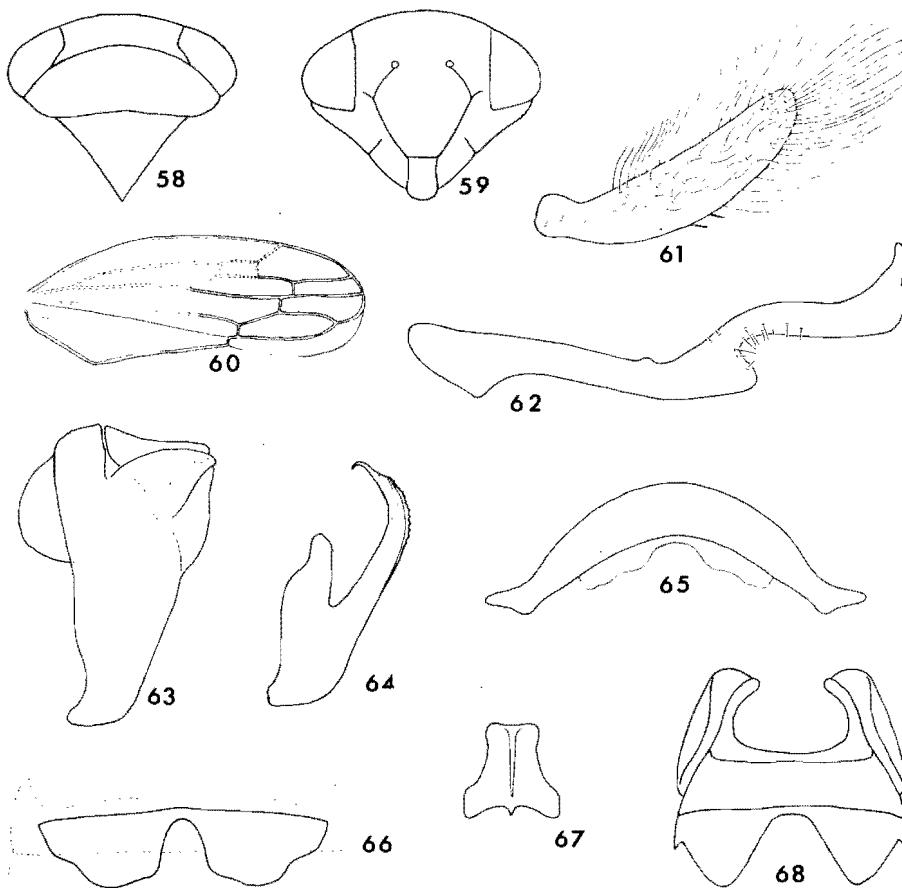
Pachynus quadriocellatus Melichar, 1908: 11.

Length: ♂ 3.4-3.6 mm (mean 3.5 mm), ♀ 3.7-3.9 mm (mean 3.8 mm).

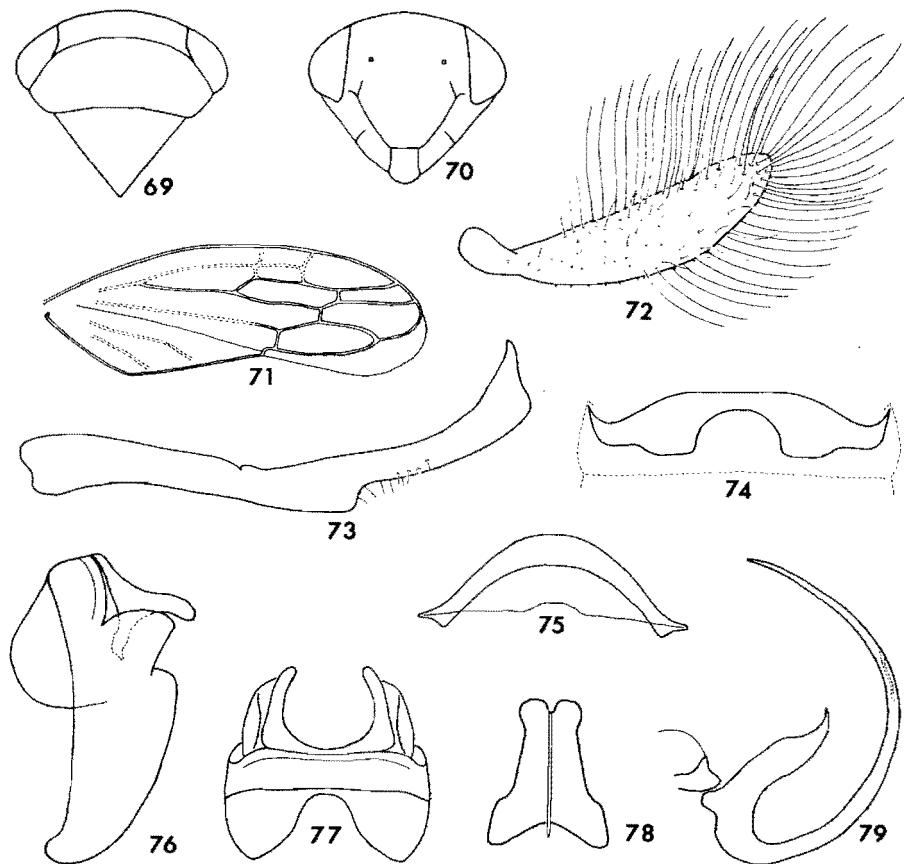
Stramineous. Vertex with spot on anterior margin near to each eye and another in each basal angle of scutellum, dark brown. Eyes maroon. Forewings hyaline suffused with pale yellow; veins yellow.

Head slightly wider than pronotum (5:4.5), shagreen; vertex with length uniform; face wider than long (5:4.5); laterofrontal sutures extending half distance from

antenna to corresponding ocellus; clypeus with sides concave, slightly longer than greatest width at margin of face, exceeding latter by one third length; lora broad, extending to margin of face throughout length. Pronotum approximately 3 times length of vertex. Scutellum equal in length to pronotum and vertex combined. Forewings with first, second and fourth apical cells of similar size, third smaller, narrow, flared apically; first subapical open basally, second largest, third small, indistinct; appendix extending to outer distal angle of second apical cell. Hind tibial processes weak.



Figs 58–68. *Idiocerus serratus* spec. nov. 58. Head, pronotum and scutellum, dorsal view. 59. Face. 60. Forewing. 61. Subgenital plate, lateral view. 62. Left style, lateroventral view. 63. Pygophore and Xth segment, lateral view. 64. Aedeagus, lateral view. 65. Ventral abdominal apodemes. 66. Dorsal abdominal apodemes. 67. Connective, dorsal view. 68. Pygophore and Xth segment, dorsal view.



Figs 69-79. *Idiocerus quadriocellatus* (Melichar). 69. Head, pronotum and scutellum, dorsal view. 70. Face. 71. Forewing. 72. Subgenital plate, lateral view. 73. Left style, lateral view. 74. Dorsal abdominal apodemes. 75. Ventral abdominal apodemes. 76. Pygophore and Xth segment, lateral view. 77. Pygophore and Xth segment, dorsal view. 78. Connective, dorsal view. 79. Aedeagus, lateral view.

Male genitalia with pygophore short, increasing in length dorsally, without processes; anterior apodemes of moderate length, their common dorsal margin U-shaped in dorsal aspect. Xth segment horseshoe-shaped in dorsal aspect, lower margin extending ventrally in lateral aspect; not fused to pygophore. Subgenital plates narrowly spatulate in lateral aspect, curved dorsally; ventral margin turned medially with row of ten minute spines; dorsal margin with row of long setae extending round apex and along apical half of ventral margin; lateral surface with shorter setae. Connective broadly Y-shaped with relatively long stem, dorsal medial keel high. Style

elongate with apex foot-like; lateral lobe prominent just distad of midlength. Aedeagus in lateral aspect with shaft elongate, curved dorsally and then anteriorly, apex acute; without processes; gonopore two thirds distance from base; basal apodeme short, curved dorsally, apex acute.

Dorsal abdominal apodemes short, extending to posterior region of segment III; ventral pair fused medially forming a continuous band.

MATERIAL EXAMINED. Lectotype ♂: Tanzania, Usambara.

Paralectotypes: 1 ♂, 3 ♀♀, same data as lectotype.

REMARKS. The type series consists of two males and three females each with the label "Usambara". The abdomen of one male had been removed, the genitalia dissected and the whole dry mounted on a card beneath the specimen. The genitalia of the other male were dissected by the author and placed in a vial beneath the specimen. This latter specimen is here designated as lectotype and the remaining male and three females as paralectotypes.

All types are deposited in the Moravské Museum, Brno.

***Idiocerus lobatus* spec. nov., figs 80-83, 86-92**

Length: ♂ 4.6 mm.

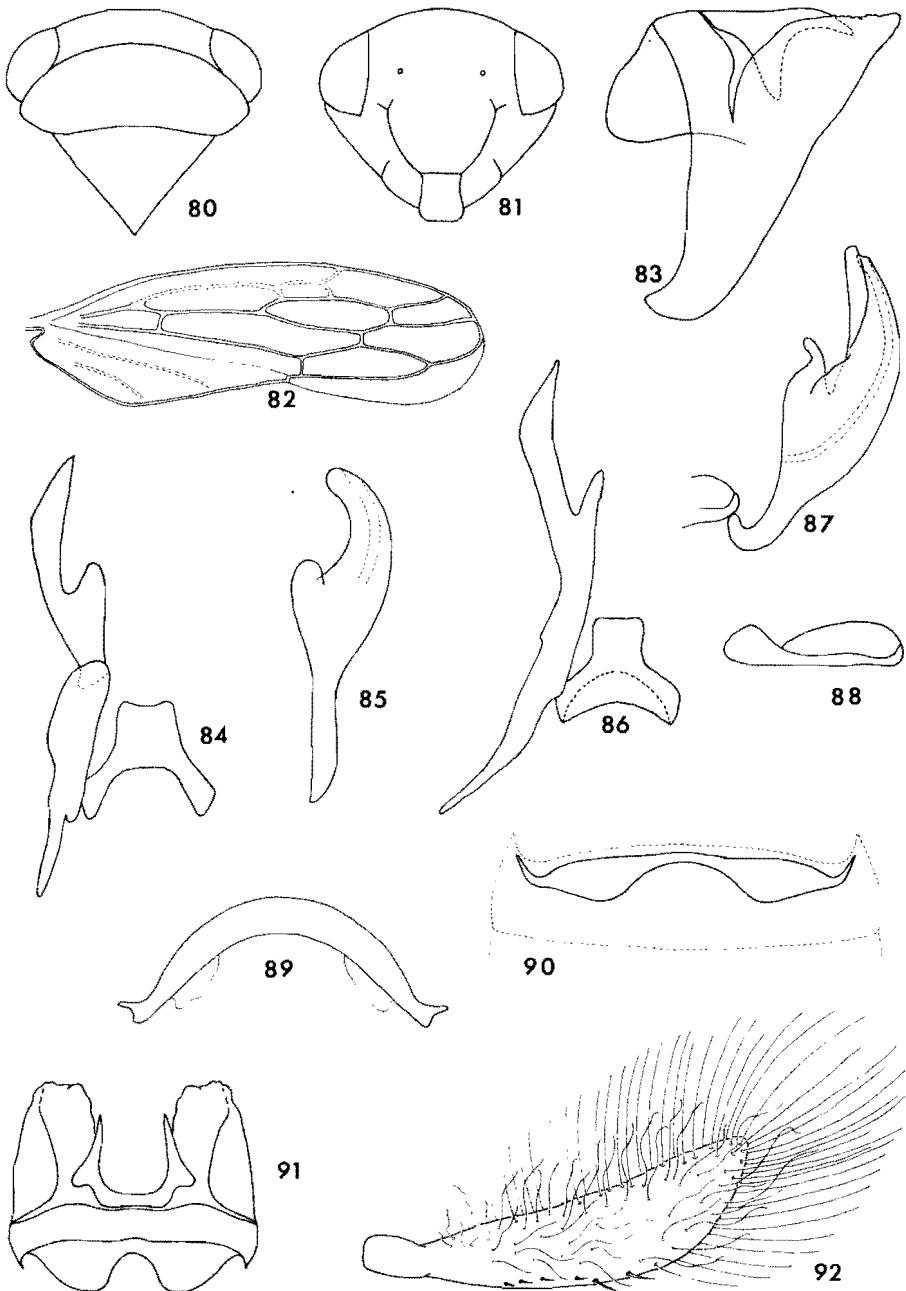
Colour and external characters as in *quadriocellatus* but with laterofrontal sutures extending one third distance from antenna to corresponding ocellus, clypellus exceeding margin of face by one fourth length and pronotum approximately twice the length of vertex.

Male genitalia with pygophore short, increasing in length dorsally, without processes; anterior apodemes long, their common dorsal margin U-shaped in dorsal aspect. Xth segment with apices bifurcate in lateral aspect, not converging medially. Subgenital plates spatulate in lateral aspect, curved dorsally; ventral margin turned medially with row of ten minute spines, visible in ventral aspect; ventral margin in lateral aspect with row of six spine-like setae, distal two long; a row of long setae along dorsal margin extending round apex and along distal third of ventral margin; lateral surface with long fine setae. Connective broadly Y-shaped with high dorsal, medial keel. Styles elongate, tapering over distal eighth to acute apex; lateral lobe two thirds distance from base, elongate. Aedeagus with shaft short, curved dorsally in lateral aspect and tapered to rounded apex; anterior margin laterally compressed over apical two thirds; processes absent; gonopore subapical; preatrium long with apex curved anterodorsally; basal apodeme short.

Dorsal abdominal apodemes broad, extending to middle of segment III; ventral pair reduced.

MATERIAL EXAMINED. Holotype ♂: Rhodesia, Bulawayo, at light, iv.1968, B. M. Gerard.

REMARKS. This species is very closely related to *citrinus*, but differs mainly in the male genitalia. The lateral lobe of the style is narrower and the aedeagus has the anterior margin of the shaft laterally compressed rather than cylindrical, over the apical two thirds, and the preatrium straight rather than curved. Although similar to *quadriocellatus* externally, the male genitalia are sufficiently distinct to indicate the absence of any close relationship between them.



Figs 80-83, 86-92. *Idiocerus lobatus* spec. nov. 80. Head, pronotum and scutellum, dorsal view. 81. Face. 82. Forewing. 83. Pygophore and Xth segment, lateral view. 86. Style and connective, ventral view. 87. Aedeagus and apex of connective, lateral view. 88. Connective, lateral view. 89. Ventral abdominal apodemes. 90. Dorsal abdominal apodemes. 91. Pygophore and Xth segment, dorsal view. 92. Subgenital plate, lateral view. Figs 84-85. *I. citrinus* Melichar. 84. Style and connective, ventral view. 85. Aedeagus, lateral view.

Idiocerus citrinus Melichar, figs 84–85*Idiocerus citrinus* Melichar, 1914: 2.

Length: ♂ 5 mm.

Colour and external characters as in *lobatus* but with clypellus wider basally and extending one third distance beyond margin of face.Male genitalia as in *lobatus* but with lateral lobe of style broader and aedeagus with anterior margin of shaft cylindrical rather than laterally compressed and preatrium straight rather than curved.

MATERIAL EXAMINED. Holotype ♂: B. Congo, Bumbuli.

REMARKS. The above description is based on the type specimen which is in poor condition. The forewings are damaged and the apical part of the appendix and the hind legs are missing. In the genitalia preparation the anterior apodemes of the pygophore, the distal two thirds of one subgenital plate and the ventral margin of the other and the abdominal apodemes are unrecognizable.

Holotype in the Moravské Museum, Brno.

Idiocerus angulatus spec. nov., figs 93–103

Length: ♂ 4.1–4.4 mm (mean 4.3 mm), ♀ 4.5–5 mm (mean 4.7 mm).

Pale stramineous with variable dark brown markings on head and pronotum; vertex with spot on anterior margin near to each eye and a similar spot in each basal angle of scutellum, dark brown. Eyes maroon, variably suffused with yellow. Forewings hyaline smoky brown; veins whitish or pale yellow turning brown in distal third of wing.

Head wider than pronotum (7:6), shagreen; vertex with length uniform; face wider than long (7:6); laterofrontal sutures short, extending half distance from antenna to corresponding ocellus; clypellus with sides concave, slightly longer than greatest width at margin of face, exceeding latter by one third length; lora broad, extending to margin of face throughout their length. Pronotum twice length of vertex, shagreen. Scutellum equal in length to pronotum and vertex combined. Forewings as in *bifurcatus* with appendix extending to middle of second apical cell. Hind tibial processes weak.

Male genitalia with pygophore short, increasing in length dorsally, without processes; anterior apodemes of moderate length, their common dorsal margin U-shaped in dorsal aspect. Xth segment horseshoe-shaped in dorsal aspect with apices bifurcate in lateral aspect; not fused to pygophore. Subgenital plates of near uniform width in lateral aspect, curved dorsally; ventral margin with two or three spine-like setae near midlength; a row of long setae on dorsal margin extending round apex and along distal third of ventral margin; lateral surface with shorter setae. Connective broadly Y-shaped with high dorsal, medial keel. Styles elongate, turned laterally two thirds from base and then angled sharply inward to acute apex; without prominent lateral lobe. Aedeagus with shaft short, curved dorsally in lateral aspect and tapered to rounded apex; processes absent; basal apodeme short.

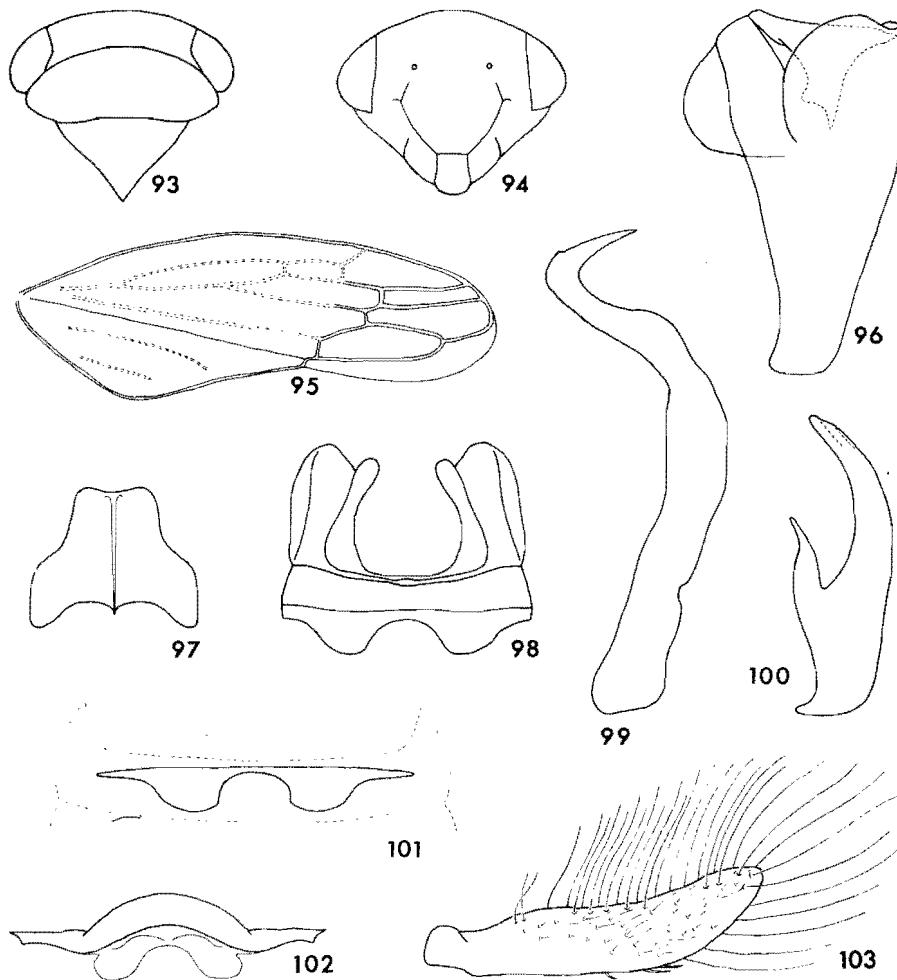
Dorsal abdominal apodemes short, extending to posterior region of segment III; ventral pair reduced, fused basally.

MATERIAL EXAMINED. Holotype ♂: Kenya, N.F.D., Wajir, 21.i.1955, I. Lansbury.

Paratypes: 7 ♂♂, 3 ♀♀, same data as holotype; 3 ♂♂, 2 ♀♀, same data as

holotype except 24.i.1955; 1 ♂, 5 ♀♀, same data as holotype except 19.i.1955; 2 ♀♀, same data as holotype except 18.i.1955. 1 ♂ and 1 ♀ will be deposited in the Plant Protection Research Institute, Pretoria

REMARKS. This species closely resembles *harpago* from which it can be distinguished by the differences in genitalia (see figs 104-112 for comparison).



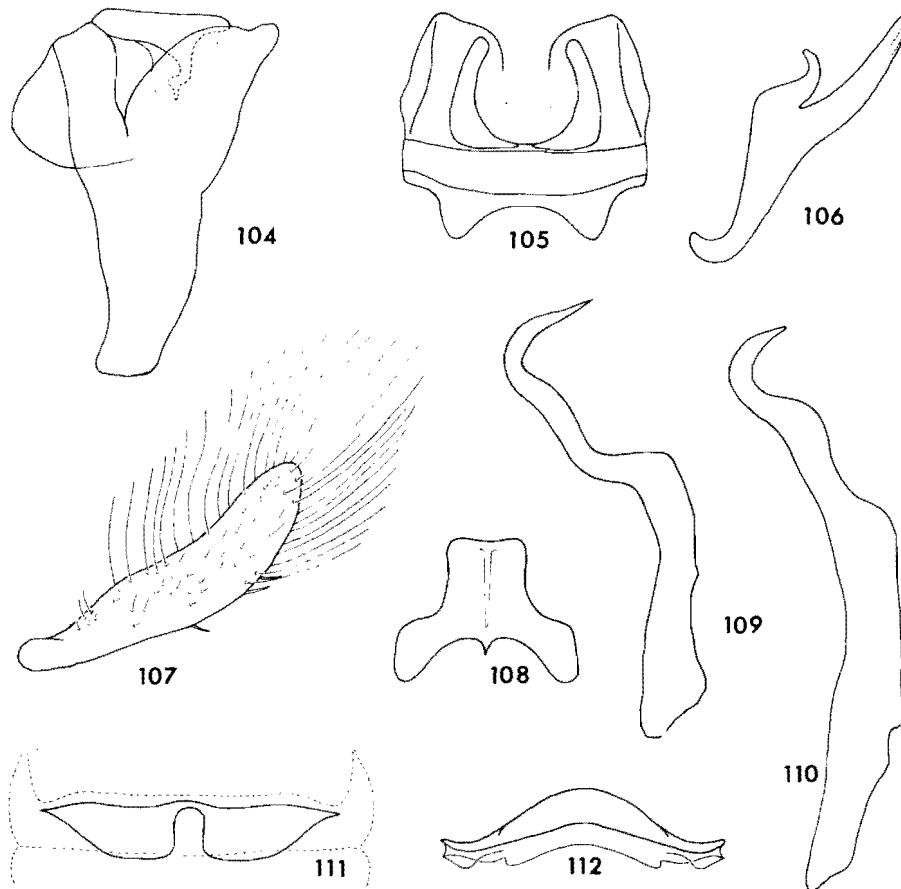
Figs 93-103. *Idiocerus angulatus* spec. nov. 93. Head, pronotum and scutellum, dorsal view. 94. Face. 95. Forewing. 96. Pygophore and Xth segment, lateral view. 97. Connective, dorsal view. 98. Pygophore and Xth segment, dorsal view. 99. Left style, ventral view. 100. Aedeagus, lateral view. 101. Dorsal abdominal apodemes. 102. Ventral abdominal apodemes. 103. Subgenital plate, lateral view.

Idiocerus harpago Heller & Linnavuori, figs 104–112*Idiocerus harpago* Heller & Linnavuori, 1968: 23.

MATERIAL EXAMINED. Holotype ♂: Ethiopia, Awash, 960 m (not 900 m as stated in original description) 40° 10' E 9° N, ix. 1957, F. Schaufele. Paratype: 1 ♂, same data as holotype.

REMARKS. Slight variation was found in the shape of the style in the holotype and paratype (see figs 109 and 110).

Types in Staatliches Museum für Naturkunde in Stuttgart.



Figs 104–112. *Idiocerus harpago* Heller and Linnavuori. From paratype except fig. 109 (holotype). 104. Pygophore and Xth segment, lateral view. 105. Pygophore and Xth segment, dorsal view. 106. Aedeagus, lateral view. 107. Subgenital plate, lateral view. 108. Connective, dorsal view. 109. Left style, ventral view. 110. Left style, ventral view. 111. Dorsal abdominal apodemes. 112. Ventral abdominal apodemes.

ACKNOWLEDGEMENTS

This study was done under the guidance of Dr W. J. Knight, for whose assistance throughout I am greatly indebted. I would also like to thank Mr W. R. Dolling for his help and Dr R. Linnavuori for information on the type series of *Pachynus quadriocellatus* and for the location of this and other species.

For the loan of types under their care I would like to thank the following persons: Dr J. Stehlík, Moravské Museum, Brno; Dr F. R. Heller, Staatliches Museum für Naturkunde in Stuttgart; Dr E. K. Hartwig, Plant Protection Research Institute, Pretoria; Mr F. W. Gess, Albany Museum, Grahamstown; Prof P. Brink, Lund University.

REFERENCES

COGAN, E. S. 1916. Homopterous Studies. Part 1. Contribution towards our knowledge of the Homoptera of Africa. *Ohio J. Sci.* **16**: 161-208.

EVANS, W. J. 1953. Les Cicadellidae de Madagascar (Homopteres). *Mém. Inst. scient. Madagascar* (E) **4**: 87-137.

——— 1960. Quelques nouveaux Cicadellides (Homoptera) de Madagascar. *Mém. Inst. scient. Madagascar* (E) **11**: 481-505.

FREYTAG, P. H. & KNIGHT, W. J. 1966. The Idiocerinae of Madagascar (Hom. Cicadellidae). *Annls. Soc. Ent. Fr. (N.S.)* **2** (1): 75-103.

HELLER, F. & LINNAVUORI, R. 1968. Cicadelliden aus Äthiopien. *Stuttg. Beitr. Naturk.* **186**: 1-42.

LINNAVUORI, R. 1961. Results of the Lund University Expedition in 1950-1951. X. Hemiptera (Homoptera): Cicadellidae. *S. Afr. anim. Life* **8**: 452-486.

MELICHAR, L. 1908. Eine neue Idiocerusart (Homopt.) aus Deutsch-Ostafrika. *Wien ent. Ztg.* **27**: 65-66.

——— 1908. Nové rody a druhý Homopter z východní Afriky. *Cas. csl. Spol. ent.* **5**: 1-15.

——— 1911. Collections recueillies par M. M. de Rothschild dans l'Afrique Orientale. Homoptères. *Bull. Mus. natn. Hist. nat.*, Paris **17**: 106-117.

——— 1914. Homopterorum nova genera et species novae Aethiopicae. *Cas. csl. Spol. ent.* **11**: 1-8.

NAUDÉ, T. J. 1926. Cicadellidae of South Africa, a taxonomic and faunistic study. *Entomolog. Mem. Dep. Agric. Un. S. Afr.* **4**: 1-106.

Manuscript received 16 April 1975.